

ISAC Meeting – May 2012

ACTION OR INFORMATION ITEM

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TOPIC: Schools, Science Curricula and Biological Houses as Pathways for Invasive Species: Opportunities and Lessons Learned for Integrated Pathway Management and Outreach

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1. DESCRIPTION OF AGENDA ITEM:

Background/Question/Methods :

We report on the scope and risks of an invasive species pathway linked with schools, science curricula, biological supply warehouses and aquaria/pet suppliers. To characterize the scope of the problem and explore solutions, we surveyed nearly 2000 teachers from eight states and two Canadian provinces (FL, NY, IN, IL, OR, WA, CA, CT, Ontario and British Columbia), interviewed curriculum specialists, conducted 8 focus groups involving 84 teachers, surveyed and worked with biological supply houses . We evaluated the value teachers placed on live plants and animals in the classroom, teachers' awareness and knowledge of invasive species, the organisms being used, sources of organisms, disposal methods, and potential solutions to unwanted introductions of non-native species. We interviewed and worked with biological supply houses ranging from corporate giants such as Carolina Biological to smaller suppliers to understand what, why and how species are shipped to classrooms. We worked with school districts, teachers, suppliers and national science curriculum developers that serve nearly half of all school districts in the USA, on potential pilot solutions and understanding barriers to increase awareness and on processes to prevent the shipment and release of invasive species some suppliers to implement solutions.

Results/Conclusions:

We have characterized the invasive species in the classrooms pathway and found the pathway to be relevant and pervasive in the 10 states and provinces we studied, including the entire West Coast from Southern California into British Columbia.). The survey of teachers revealed a high diversity of organisms used in classrooms from biological supply houses, nurseries, aquaria/pet stores, and school collections from the wild. In total ~1000 organisms were listed; some of the most frequently listed species by the teachers are known or potential invasive species. We learned that organisms are not labeled and often do not come with their native origin, specific names or taxonomies. Teachers may not know whether a species is native or non-native, let alone invasive. Approximately 25% of teachers indicated they released their organisms into the wild after use in the classroom. Of the teachers that reported releasing organisms, only 10.5 % participated in planned release programs, such as a salmon/trout classroom hatchery program. We confirmed that live organism kits sold by biological supply houses are a major source of non-native organisms used in classroom science projects. However, we also learned that aquariums and pet stores are sources for nearly 50% of live organisms purchased for use in classrooms. The schools pathway cannot be addressed holistically without characterizing and developing solutions for the aquaria/pet store sub-pathway. Teachers are almost evenly split on whether they will euthanize animals used in classroom activities. We learned about the species diversity of organisms shipped by biological supply houses as part of

science kits, surveyed and worked with biological suppliers on approaches to reduce the risks from invasive species. A pilot program by a biological supply house, substituting a native crayfish species in-lieu of non-natives has proven more challenging than expected, possibly due to our lack of knowledge in the husbandry of native species. Our pathway stakeholder's based research has guided the development of products including a Don't Let it Loose message for science teachers and training kits that enable teachers to more seamlessly integrate invasive species into science curricula and promote service learning and inquiry on student-based solutions to invasive species issues.

2. WHY IS THIS ITEM IMPORTANT TO NISC / ISAC? HOW IS IT RELATED TO THE NATIONAL INVASIVE SPECIES MANAGEMENT PLAN?

This work compliments ISAC current development of a white paper involving internet sales / e-commerce.

OBJECTIVE OC.6: ENHANCE OUTREACH ON INVASIVE SPECIES.

- **Implementation Task OC.6.1:** Determine approaches regarding invasive species pathways for strategic outreach to targeted user groups and businesses.

Performance Element OC.6.1.1: Develop outreach materials for target audiences cooperatively with relevant stakeholders and make available through the internet.

- **Implementation Task OC.6.2:** Work with existing educational organizations to enhance invasive species information delivery to primary and secondary educators.

STRATEGIC GOAL 2: Develop and enhance the capacity to identify, report and effectively respond to newly discovered/localized invasive species.

OBJECTIVE EDRR.2: MAKE TAXONOMIC INFORMATION MORE READILY AVAILABLE TO GOVERNMENTS AND THE PUBLIC.

3. PREVIOUS ACTIONS TAKEN BY NISC / ISAC ON THIS ITEM:

4. ACTION REQUESTED OF NISC / ISAC: Informational. Discuss and seek ISAC input on further improving our capacity to address the schools pathway holistically. Ways that this work can enhance/complement ISAC's current development of a white paper on internet/e-commerce sales. Connections with the pet stores pathway. How to address the sensitive issue of euthanasia of organisms used in classrooms? Ways to implement what we have learned and some of the pilot products we have developed on a broader scope across the country.

5. ALTERNATIVES:

6. ATTACHMENTS: